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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,322	12/04/2003	Kenzo Matsumoto	JCLA12520	1383

7590

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EXAMINER

LEUNG, RICHARD L

ART UNIT PAPER NUMBER

3744

DATE MAILED: 11/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/729,322

Applicant(s)

MATSUMOTO ET AL.

Examiner

Richard L. Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 and 2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As mentioned in the previous action dated August 24, 2004, the claims recite the term "combustible nature refrigerant," but there is no clear definition of this term in Applicant's disclosure, and the term does not appear to be one commonly understood in the art. While it is noted on page 6 of Applicant's remarks dated October 15, 2004, Applicant submits that the term "natural" has its common meaning, the term "natural" is not at issue, and Applicant has not expressly addressed the phrase, "combustible nature refrigerant." As such, the claims are still considered indefinite, and the rejections still stand. To overcome this rejection, Applicant is respectfully advised to simply replace the recitations of the phrase "nature refrigerant" with --natural refrigerant-- in the claims and specification.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 06-017040 (Kobayashi) in view of US 5736063 (Richard et al.). Kobayashi discloses a refrigerant for a refrigerating device consisting essentially of a combustible nature refrigerant (propane) and a carbon dioxide refrigerant (see English abstract). It is disclosed that the ratio of propane to carbon dioxide is in the range of 8:2 to 6:4 by mole, which is approximately equivalent to 20-40 mass % of carbon dioxide. While it can be inferred from Fig. 1 that this refrigerant composition is used in a vapor-compression refrigeration cycle, which is a well known and typical process in the art, Kobayashi does not expressly disclose that the refrigerating device comprises a compressor, a gas cooler, an expansion mechanism, and an evaporator that are sequentially connected by using refrigerant pipes, as best understood. Richard et al. teach a conventional vapor compression refrigerator comprising a compressor, a gas cooler (condenser), an expansion valve, and an evaporator (column 1, lines 19-40) that inherently are connected sequentially by refrigerant pipes. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the refrigerant disclosed by Kobayashi in the refrigerating device taught by Richard et al. because the refrigerant is used in a vapor compression cycle, and furthermore, Richard et al. demonstrates that such refrigerating devices can utilize refrigerants comprising propane and carbon dioxide (see particularly Table 2, examples 51, 55, 63, 67, and 71).
5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 06-017040 (Kobayashi) in view of US 5736063 (Richard et al.) and "Guidelines for the use of Hydrocarbon Refrigerants in Static Refrigeration and Air Conditioning Systems"

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(ACRIB). Kobayashi discloses a refrigerant for a refrigerating device consisting essentially of a combustible nature refrigerant (propane) and a carbon dioxide refrigerant (see English abstract). While it can be inferred from Fig. 1 that this refrigerant composition is used in a vapor-compression refrigeration cycle, which is a well known and typical process in the art, Kobayashi does not expressly disclose that the refrigerating device comprises a compressor, a gas cooler, an expansion mechanism, and an evaporator that are sequentially connected by using refrigerant pipes, as best understood. Richard et al. teach a conventional vapor compression refrigerator comprising a compressor, a gas cooler (condenser), an expansion valve, and an evaporator (column 1, lines 19-40) that inherently are connected sequentially by refrigerant pipes. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the refrigerant disclosed by Kobayashi in the refrigerating device taught by Richard et al. because the refrigerant is used in a vapor compression cycle, and furthermore, Richard et al. demonstrates that such refrigerating devices can utilize refrigerants comprising propane and carbon dioxide (see particularly Table 2, examples 51, 55, 63, 67, and 71). Kobayashi, as best understood, also fails to expressly disclose that the maximum fill amount of the propane is 150g. ACRIB teaches that the recommended charge size of hydrocarbon refrigerants for use in systems installed in rooms of any size is 150g or less (see Sections 2.1-2.2, particularly page 7). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have had a maximum fill amount of 150g for the propane in the refrigerant disclosed by Kobayashi because ACRIB expressly teaches

that such an amount is the acceptable safe charge level for combustible hydrocarbon refrigerants for use in rooms of any size.

***Response to Arguments***

6. Applicant's arguments, see page 6, filed October 15, 2004, with respect to the objection to the specification regarding the non-descriptiveness of the title and informalities have been fully considered and are persuasive in view of Applicant's amendment. The previous objection to the specification has been withdrawn.

7. Applicant's arguments, filed October 15, 2004, with respect to the rejections of claims 1 and 2 under 35 U.S.C. 112, second paragraph have been fully considered but they are not persuasive. As discussed above, while Applicant has addressed the term "natural," Applicant has not expressly addressed the term "combustible nature refrigerant," which renders the claims indefinite.

8. Applicant's arguments, filed October 15, 2004, with respect to the rejection of claims 1 and 2 under 35 U.S.C. 102(b) and 35 U.S.C. 103(a) have been considered but are not persuasive in view of the new ground(s) of rejection.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard L. Leung whose telephone number is 703-306-4154. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise L. Esquivel can be reached on 703-308-2597. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Richard L. Leung  
Examiner  
Art Unit 3744

  
DENISE L. ESQUIVEL  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700

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